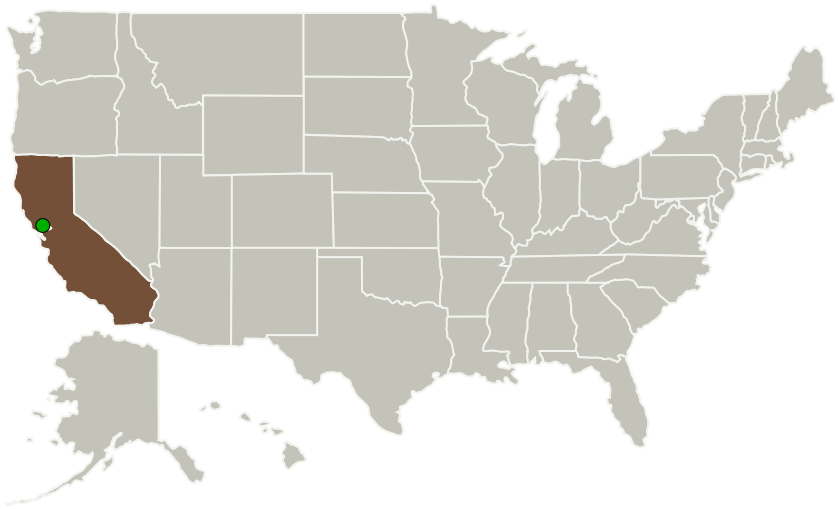
Ultrasensitive Airborne Formaldehyde Monitor, Phase I

Completed Technology Project (2016 - 2016)

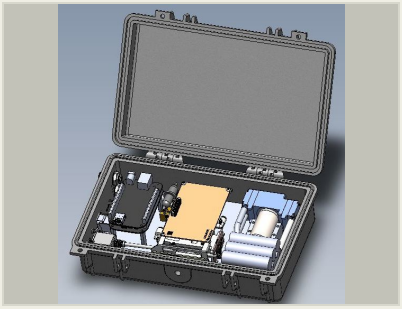
Project Introduction

This Small Business Innovative Research Phase I proposal seeks to develop an ultrasensitive, mid-infrared laser-based formaldehyde gas sensor system for airborne and ground-based atmospheric monitoring. The proposed instrument will be capable of accurately determining sub-parts-per-billion formaldehyde concentrations in seconds. This compact, lightweight instrument will be capable of long-term autonomous operation, and require minimal power. The Phase I research will demonstrate the feasibility of the technology by performing measurements on formaldehyde samples using Aeris' prototype compact spectrometer platform. The results of these tests will be used to quantify detection limits and hardware requirements for a Phase II instrument. Commercial systems based on the Phase II prototype will be developed and marketed during Phase III.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Aeris Technologies, Inc.	Lead Organization	Industry	Redwood City, California
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California



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Primary U.S. Work Locations
California

Project Transitions

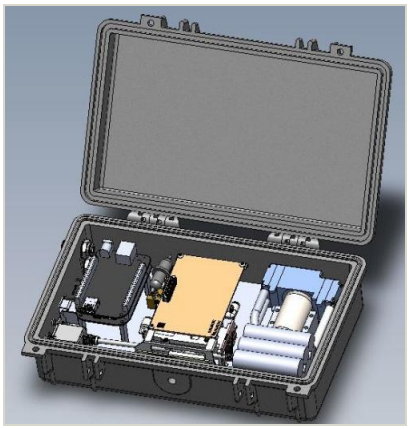
June 2016: Project Start

December 2016: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139823)*

Images



Briefing Chart Image
Ultrasensitive Airborne Formaldehyde Monitor, Phase I
(https://techport.nasa.gov/image/137066)

Final Summary Chart Image
Ultrasensitive Airborne Formaldehyde Monitor, Phase I Project Image
(https://techport.nasa.gov/image/125856)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Aeris Technologies, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

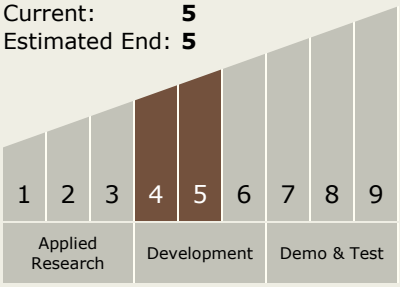
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Joshua Paul

Technology Maturity (TRL)

Start: **4**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.4 Environment Sensors

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System